



D20 EME – Ethernet Memory Expansion

GE Energy Services is pleased to announce our latest offering for the workhorse D20 and D200 substation automation platform—the D20 EME Ethernet Memory Expansion.

Benefits

- Provides an economical Ethernet-on-D20 solution
- Transparent replacement for our current offering
- Memory on configurations with base memory is field upgradeable
- Direct connection to all 10MB Ethernet media types
- Can be used with the 3U D20 chassis
- Lower cost



Features

The D20 Ethernet Memory Expansion (EME) is a VME-based product combining the two most needed features for mid- to high-end substation automation solutions—Ethernet and global memory expansion. Use of the D20 EME allows VME based D20 and D200 systems to be connected directly onto any 10MB Ethernet based network in common substation use.

Available configurations include Ethernet only; memory only; and both Ethernet and memory.

Configurations with memory come with 8MB of battery-backed static RAM standard. These configurations can be expanded in-field by addition of a memory card to a total of either 16 or 24MB of battery-backed static memory.

Configurations of the D20 EME with Ethernet come standard with support for two independent 10MB channels. Media Interface Cards are available to support the following media types:

- 10BASE-T
- 10BASE2
- 10BASE-FL

Combination Ethernet and Global Memory

The EME is comprised of two parts: the Ethernet Memory Card (EMC) and the Media Interface Card (MIC). The EMC is a single-slot full-height (6U) VME Euro-card sized assembly that contains the VME bus interface, Ethernet media interface and global memory. The MIC is a single-slot half-height (3U) Euro-card sized assembly that provides signal conversion and physical interface to the various types of LAN media.

Connection between the two cards is via a cable that can be either external (for the D20 3U chassis) or internal (for the D200 6U chassis). When used with the D20 ME processor, the external cable option allows an Ethernet-on-D20 solution in the economical 3U chassis form factor.

The D20 EME is fully compatible with global memory and Ethernet solutions currently offered by GE Energy Services. For existing installations, the D20 EME can be used directly to replace either or both of the global memory and Ethernet cards making the transition to the D20 EME seamless and transparent.*

Network Connection

- All Ethernet connections are IEEE 802.3 compliant and are made directly to the rear of the Media Interface Card.
- The 10BASE-T MIC uses RJ-45 connectors suitable for use with CAT5 or greater UTP cable.
- The 10BASE-2 MIC uses standard BNC connectors suitable for use with thin coax Ethernet cabling.
- The 10BASE-FL MIC uses ST style connectors for direct connection of single or multi-mode glass or plastic fibre optic cable.

Indicators

The D20 EME features a full set of indicators providing at-a-glance system status and troubleshooting information.

The EMC card has front panel indicators for:

- Power
- Battery status[†]
- VME bus access

The 10BASE-T MIC shows for each channel:

- Transmit
- Receive
- Link
- Collision
- Polarity
- Jabber

Transmit and Receive are viewable from the front panel, other indicators are visible from the rear of the card.

The 10BASE-FL MIC shows for each channel:

- Transmit
- Receive
- Link
- Collision
- Jabber
- Power

Transmit and Receive are viewable from the front panel, other indicators are visible from the rear of the card.

No indicators are available on the 10BASE2 MIC.

Compatibility

- The D20 EME is compatible with all D200 systems supplied by GE Energy Services using global memory or Ethernet.
- Use of Ethernet or global memory requires CCU Base.
- Compatible with any GE Energy Services supplied VME based D20 or D200 chassis.
- VME interface compliant with ANSI/IEEE Standard 1014-1987

Power Requirements

EMC and MIC combined

- 5 V_{DC}, 1.5W typical, 2W maximum

Physical

EMC

- VME compliant
- 6U height, 4HP width

MIC Cards

- 3U height, 4HP width, approximately 6.3" (160mm) depth

Environmental

- Operating temperature: -20 to +70°C
- Hardened for operation in the substation environment.

^{*} When replacing an existing card with the D20 EME a revised Ethernet driver is recommended to guarantee unique Ethernet addressing on the LAN

[†] Battery status indicators are available only on configurations with memory.



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